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Wn-65020

Grays Harbor, Wn.

Ditch to be blasted along the brush line.

Photo By: Therone I. Faris

July 28, 1943



Enlargement  
405



Wn-65021

Grays Harbor, Washington

Blasting ditch - Time 3 hrs - 4 persons (12 man hours) Ditch 375 ft -  
used 5 boxes 50%. The opening of this ditch will give a minimum of  
40 additional animal months of pasture on 20 acres drained by it. It  
will also serve a neighbor who helped in doing the work.

Photo By: Therone I. Faris

8-27-43





Wn-65022

Grays Harbor, Wn.

View of ditch which has been dug  
with powder. Note small berms and  
even depth and uniform bank slope.

Photo By: Therone I. Faris

8-31-43

Wn-65022



Region

7





A-Ida-1

Robinson Park Dam northeast of Moscow, Idaho on Project area. Note de-silting dam in upper right background.





A-Ida-15,001

Low oblique of contour furrows on flood control program watershed  
surrounding city of Pocatello, Idaho.





A-Ida-15,002

City of Pocatello, Idaho (area being protected by flood control program).





A-IDA-20,002.

Squaw Creek Project, Idaho.  
Range lands really "going". Much of area practically bare of  
adequate protective grass cover, result is the dissection that  
is evident in picture.





A-Ida-20,009

Contour furrows on range land southwest of Horseshoe Bend, Idaho.



A-Ida-20010

9-13-37

Contour furrows constructed on overgrazed range land 15 miles south-east of Emmett, Gem County, Idaho, and two miles east of Sweet, Idaho. Land owned by Sweet Clover Land Company. These furrows serve to hold the moisture on these semi-arid lands and thus aid in the restabilization of a grazing area. Furrows were installed with a terracer and reversible plow, then finished by CCC hand labor under supervision of SCS.





A-Ida-25,004

9-12-37

Photograph No. 3 of a series of overlapping obliques of the watershed east of the city of Boise, Idaho. These photographs were taken at the request of the Idaho State Coordinator, SCS, for distribution to field parties in order that a preliminary survey of a particular area could be made before the parties actually went into the field.



A-Ida-25017 Power County 9-18-35.  
View, taken looking downstream, of farming, grazing, and general  
topography of Clifton Creek drainage, Sec. 30, T. 9S, R.34E.





270705

September, 1931

Although under Federal management for 30 years, too many livestock have destroyed most of the original plant cover and induced serious erosion conditions. Boise National Forest, Idaho. Photo by F. G. Renner.





C-8612

White Pine Soil Conservation District, East-Central, Nevada. 1943.  
5,628,800 acres.

slide 363<sup>e</sup>





C-8613

White Pine Soil Conservation District, East-central Nevada  
12" metal pipe line 1 mile long. W. S. Hacket ranch.

slide 364<sup>c</sup>





Ore-35,007. Oregon.  
EROSION CONTROL - Wind Control.

Photograph showing a catch fence on the right and sand-stilling fences to preserve partially vegetated area. The catch fence shown here is also serving to build up a wind gap in the second dune.

(colored)  
Slide D-100<sup>u</sup>





Ore-35,017. Oregon.  
EROSION - Wind.

Looking north along a newly forming fore dune on the Emily Waterhouse place. The line of sand encroachment in the Sea Lyme grass can be seen. In the fall the top of the dune was as thickly covered as the back slope. Winds during the past winter raised the dune from six to twelve inches. This new fore dune has already attained sufficient height to afford protection to the back areas during ordinary years. April 2, 1936.

(Colored)  
Slide C-43<sup>u</sup>





Ore-35,040

Clatsop County, Oregon

6-15-36

A comparison of Holland grass and willow plantings. Note sand building about Holland grass.

(Colored)  
Slide E-68





Ore-35,035. Oregon.  
EROSION - Wind.

Sand movement from unprotected beach area encroaching upon summer cottages and rapidly destroying valuable property. Clatsop County. 6/15/36.

(Colored)  
Slide C-44a





Ore-35,075

Clatsop County, Oregon

7-30-37

A view of the observational grass nursery on bare sand, Astoria Nursery Unit. Date and rate of planting, spacing trials and effect of fertilizers are being tested to determine management for production of sand-stilling grasses. Two hundred eighty one-fortieth-acre field plantings are shown. Differences in responses to management and treatment can plainly be seen.

(Colored)  
Slide E-69





Ore-35,107

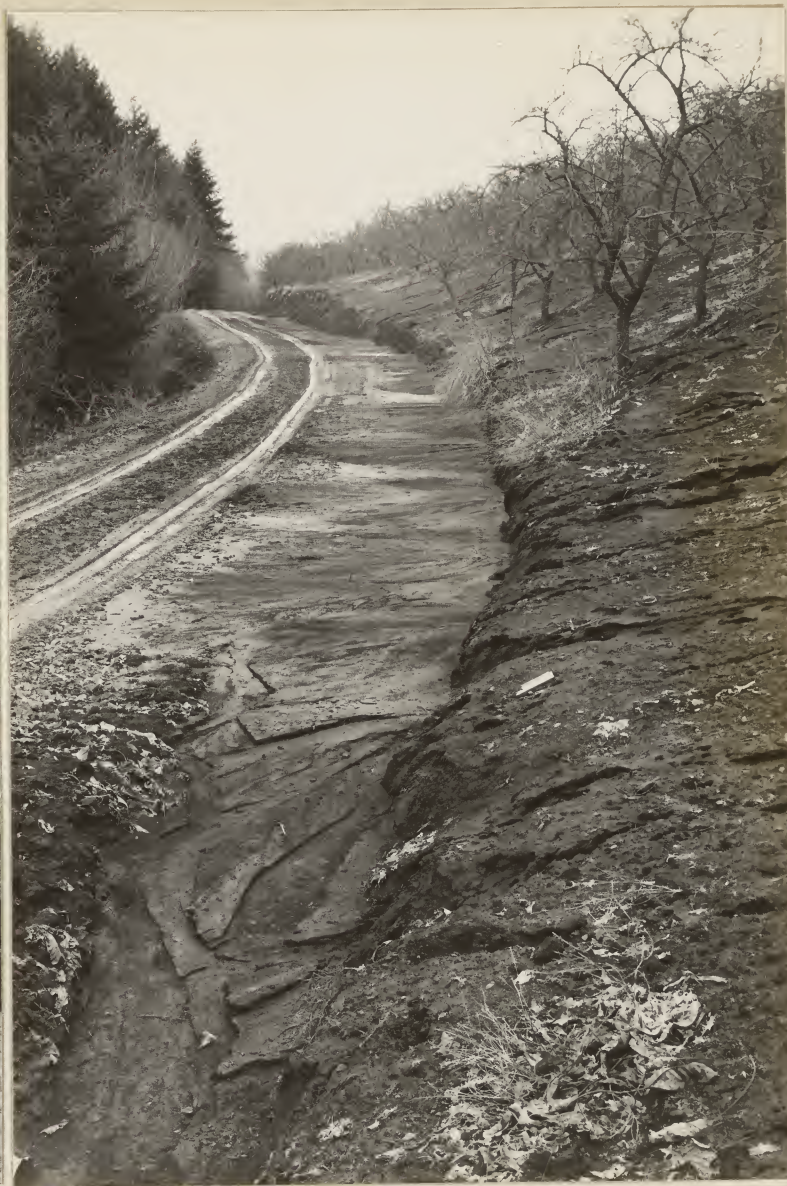
Clatsop County, Oregon

10-7-37

Two-year old plantings of Holland grass (Ammophila arenaria) on land owned by State of Oregon Military Department. Note catchment of sand drift and thrift of the Holland grass as well as beginning of invasion of sand verbena (Abronia latifolia spp.)

(Colored)  
Slide E-70





(OVER)

Slide E-35



ORE\*45009. Yamhill County, Oregon; March 12, 1937.

Looking up 30% slope in prune orchard. Incipient gullying on Dundee Red Hills soil shows the need for erosion control practices probably including cover crop supplemented with terraces.

ORE-45007. Yamhill County, Oregon; March 12, 1937.

Roadside inundation of Dundee Red Hills soil deposited from incipient gully run-off shown in photographs ORE-45008 and ORE-45009. The culvert in the lower left foreground is shown one-half silted full carried from excess run-off prune orchard below the roadbed and deposited a heavy concentration of topsoil in brush and timber on the left-hand side of the road. Silt deposit is about 20 inches.





Ore-40112

Oregon

G. F. Sturdevant, left, records the water content on the Seven Lakes snow course, as R. W. Childreth, right reads the figures from the scale.

Photo By: Jack James

1941





Ore-35189

Oregon

This ditch was constructed to improve the drainage along the lower Little Nestucca river. The soil is largely Clatsop silty clay loam, with occasional patches of peat. It is in Land Capability III due to the difficulty of maintaining adequate drainage. Completion of this job will require removal of brush and tussocks and seeding to improved pasture grasses.

Photo By: Magnus

11-42





6-44 - Pullman, Washington  
— EROSION - Sheet

Sheet erosion on Palouse silt loam. This land lost at least 50 tons of soil to the acre. It was summer-fallowed in 1933 and left unprotected against the forces of erosion during the winter. The clay hilltop absorbed little water and a heavy run-off was responsible for the severe erosion on the slope. C. J. Bower farm, near Moscow, Idaho. January 30, 1934





6-67 - Pullman, Washington  
EROSION - Gully

Gully erosion two miles above Morengo Wash. The field on which the gullies are now seen was once under cultivation but necessarily abandoned. The run-off and sheet erosion from lands above this field have started and developed the gullies shown. February 2, 1934.





6-78 - Pullman, Washington  
EROSION - Sheet

Sheet erosion in the Patit Valley north and east of Dayton. Sheet erosion after summer-fallow erosion is starting real gullies. Tremendous soil losses occurred from this unprotected summer-fallow during the present winter. Note that harrowing operations have already been begun in the upper part of the field but have failed to completely obliterate the evidences of erosion. February 3, 1934.





6-94 - Pullman, Washington  
EROSION - Soil Slip

On Roscoe Cox farm north of Pullman, Whitman County, Washington. This is 42 inches deep, and 50 feet in diameter. It went out on December 22, 1933. 63% northeast slope. Such land should be seeded to permanent vegetation. February 3, 1934





6-117. Washington.  
EROSION - Sheet.

Soil slip on Ben Druffel farm, Whitman County, Washington. This soil slipped out during the month of December. The slope gradient was between 50 and 60 percent. Such slips should be seeded to permanent vegetation. 2/20/34.





6-242 - Pullman, Washington  
EROSION - Sheet

Erosion on a bean farm south of Troy, Idaho. Rows running up and down hill greatly aggravate soil losses.





6-436 - Washington.  
EROSION CONTROL - Strip Cropping.

Close up of field shown in 6-442. These strips were seeded one ten foot drill width wide with SES drill. The seeding was finished about a month before this was taken. July 19, 1934. A. L. Hafenrichter.





6-442 - Washington.  
EROSION CONTROL - Contour Cultivation.

Strips of winter wheat seeded on the contour in a summer fallow field on the Arthur Snow farm a mile and half south of Moscow. This method is effective in retarding the down wash of soil on moderate slope.

July 19, 1934. Al Hafenrichter.





Washington-6-550. Whitman county. September 1934. Log check dam in large gully on Tom Prichard place.

(Colored)  
Slide C-29





6-719 - Washington.  
MACHINERY.

Plowing with disk plow in heavy wheat stubble. Fred Wexler farm.





6-745 - Pullman, Washington.  
EROSION - Gully.

Serious gully (No. 9) on badly overgrazed range land near American Falls, Power County, Idaho. The gully at the bottom of the hill was over 20 ft. deep. This land was once covered by a good stand of bunch-grass. 9/29/34.



6-762 - Washington.  
EROSION CONTROL - Terraces.

Terraces on a steep N hillside of the Leonard Brown farm. These terraces were made with an especially constructed tractor drawn gang plow and were finished with a grader. Trees will be planted in these terraced channels. Sec 18 /T 14 N R 46 E. Whitman Co. Oct. 5, 1934. A. L. Hafenrichter.

(colored)  
Slide A-106u





6-758. Oregon.  
EROSION - Gully.

Serious gullying on grazing land at Durkee, Baker County, Oregon.  
This land could all support an abundant bunchgrass cover. It has been  
ruined by overgrazing. October 2, 1934. Photo by A. L. Hafenrichter.

(colored)  
Slide C-28<sup>u</sup>



6-1124. Oregon.  
EROSION CONTROL - Gully Control.

A graded-in gully on the Wildhorse project near Athena, Umatilla County, Oregon. Low check dams were placed in the gully before the grading work was done; the spring-tooth harrow was used to smooth down the ground. The seed bed will be prepared and the entire water course seeded to perennial grasses. March 23, 1935.





6-1494 - Pullman, Washington  
EROSION CONTROL - Grasses

Use of typical hill and north slope seedings on Project #6. Hilltops are eroded badly and are submarginal for wheat production. Steep north slopes average more than 40% slope gradient. Erosion from these lands is reducing the value of the lesser slopes lying adjacent to and below them. Steep lands such as shown have been dedicated to permanent seedings of alfalfa and grasses. When dedicated to this new use, erosion is adequately stopped and run-off is greatly reduced. This mixture of grass yielded approximately two tons of hay per acre. June 13, 1935

(colored)  
Slide A-48u





45-2.<sup>NB</sup> Washington.  
EROSION - sheet.

Upper slope is summer-fallow and lower slope is wheat stubble where wheat was cut just a few days before rain of July 30, 1931. The erosion on the wheat stubble was slight except where the concentrated runoff from the summer fallow crossed the corn at these points. The erosion was only a surface wash with much less depth than on the summer-fallow above.  
Whitman County. August 1, 1931.





45-34 - Washington

The braiding in this picture is dark soil washed from bare ground above and deposited over accumulated snow below. Palouse Wheat Belt.

(Colored)  
Slide #24



A-WN-8  
Washington.  
Ervin E. King farm. Under cooperative agreement.





WN-28

Whitman County

10-10-36

This picture shows sheet erosion on top of the hill, with silt deposits on frozen drift. The soil above and below the drift is thawed out. Four miles southwest of Pullman, Sec. 21, R. 45E, T. 14N.

(Colored)  
Slide #21



Wn-29. Washington.  
FARMING.

This picture shows winter wheat stubble disk-tilled September 1936  
with a John Deere 26" disk tiller. George Swales farm,  $1\frac{1}{2}$  Mi. North  
of Johnson, Whitman County, Washington. 10/10/36.

(Colored)  
Slide C-49<sup>u</sup>





WN-52. Washington.

Heavy snowbank accumulation on a north slope on the Pacific Northwest Soil and Water Conservation Experiment Station, three miles north of Pullman, Washington. Note the spots of soil on top the snow which was blown from clean cultivated field adjoining. Snowbank accumulation such as this is the direct cause of soil slips.

6-94. Washington.

Soil Slip on Roscoe Cox farm north of Pullman, Whitman County, Washington. This slip is 42 inches deep and 50 feet in diameter. It went out on December 22, 1933. 63 per cent northeast slope. Such land should be seeded to permanent vegetation. NW $\frac{1}{2}$  of Sec. 29, T.15N, R.45E.

WN-50. Washington.

The effect of the control of snow drifting is apparent in this picture. The right-hand side of the photograph shows how the snow has been held within the planting and on top of the ridge; whereas the left side of the photograph, which is at the end of the planting, shows how the snow has drifted over on the slope where it was not held back by the trees. An observation of this planting on March 16, 1937 showed that all of the snow contained within the planting had entirely melted with very little indication of run-off; whereas the drifts formed adjacent to this planting erosion had resulted. In one instance a small soil slip was apparent directly below the drift. Another advantage of planting a hilltop to trees for the control of snow drifting is that the snow will be held in and adjacent to the planting and thereby melt much sooner than snow deposited on the north slopes. Snow being held late in the spring on north slopes prevents farming operations until all the snow has melted.



Wn-66                      Whitman County                      6-4-37  
 7 strains of Agropyron spicatum being grown in the observational nursery at Pullman, Washington. Each of these has proved to be a distinct "ecological strain" collected from the native vegetation of the Palouse climax prairie in Region 11. These strains differ in growth habit, relative development of the different stages in the life cycle, leafiness, width of leaf, date of maturity, seed production and habits, ground cover, and specific adaptation to different erosion problem areas in the Pacific Northwest. The fourth row from the left is being increased as especially desirable.

(W-2617)  
 Rows 147-153

Wn-60                      Whitman County                      5-31-37  
 4 ecological strains of Poa nevadensis grown in the Pullman Unit of the Soil Conservation Nurseries at Pullman, Washington. All conditions uniform except location where selections were made from the native vegetation of the Pacific Northwest. This species is one of the more promising. Selection of ecological strains from the native vegetation is a promising field of work. Growing the strains in the observational bring out the differences shown here. 1-3/4 mi E of Pullman, Washington.







WN-5007

Wn-5007. Washington.  
FARMING.

Field gully which is the result of continuous summer-fallow-winter wheat farming in the adjoining fields.  
C. J. Broughton farm,  $1\frac{1}{2}$  miles northeast of Dayton, Columbia County, Washington.

(Colored)  
Slide C-75<sup>a</sup>



Wn-5027. Washington.  
EROSION CONTROL - Gully Control.

This is an after picture of Broughton Gully. The gully was sloped by hand labor and grader, then seeded to alfalfa, grass, and locust trees. See before picture Wn-5007. One mile east of Dayton, Columbia County, Washington.  
10/29/36.



Enlargement #54  
See also Enlargement #260  
KAN 5156 on one side  
WN-10017 on other



WN-10017. Washington.  
FARMING.

This field was fall chiseled. Chiseling is a rough tillage method designed to control run-off and give better moisture penetration due to the incorporation of crop residues. No sign of run-off was apparent in this field after a three-inch rain which occurred in January. Compare this field with those shown in WN-10016 and WN-10018.

(Colored)  
Slide E-1<sup>u</sup>





Wn-15050

Garfield County

3-6-40

Winter wheat on straw-mulch type of trashy fallow. Practically no loss of soil is indicated. Compare with Wn-15051. Mayview silt loam. Oscar Victor, owner-operator, 21 miles northeast of Pomeroy, Washington.

Slide # 215<sup>ac</sup>





Wn-15051

Garfield County

3-6-40

Severe erosion due to lack of surface protection. Field plowed with moldboard plow following winter wheat crop. Summer fallowed in 1939 and planted to winter wheat. 8.3 tons per acre soil loss. Mayview silt loam. Roy Kimball, owner-operator, 21 miles northeast of Pomeroy, Washington.

Slide # 216 en



A-WN-10,020

Walla Walla County

7-16-37

Whirlwinds in finely-tilled summer fallow. This field is badly infested with morning glory. The weeding operations have pulverized the soil finely, aggravating wind erosion. Although fairly flat this land blows readily. Cornwall Estate operated by Wm. Vollmer, Walla Walla County, Washington.





Wn-10,028. Washington.  
EROSION CONTROL - Gully Control.

In the foreground is shown a field of spring wheat; in the background a field of summer-fallow. Note the gully which has been filled and seeded to a grass-alfalfa mixture. Delbert Barger farm, six miles east of Walla Walla, Walla Walla County. June 18, 1936,

(Colored)  
Slide C-51<sup>u</sup>



A-WN-35,005

6-14-37

Sheet erosion on north and east slopes seeded to spring wheat. Four miles southwest of Waitsburg, Washington.





A-WN-35,006

August 1937

Following the harvest season, the farmer has worked this field by plowing in the gullies and leaving the loose soil in gully bottoms without seeding. or using any other method of control to prevent the wash of this loose soil from his field. This photograph was taken five miles north of Central Ferry, Washington, and is a typical example of the farm method used by many farmers in this area.



WN-35,007. March 3, 1936. Incipient gullying to plow sole and severe muddy inundation in a fine tilled summer fallowed field. Mellinger farm near Seltice Station, south of Tekoa, Whitman county, Washington. Mr. Mellinger said that this field had been cultivated throughout the summer (in fact, seventy-two or seventy-five times) in an effort to control noxious weeds. The ground was therefore pulverized to a fine ashy condition before being seeded to winter wheat late in the fall. The entire broad hilltop to the right of the picture has intermittent clay outcrops. The ten or fifteen acre hilltop, even though relatively level, presented a network of anastomosing, tiny, clay-cut and clay-filled channels. The larger incipient washes shown back center were cut from the run-off from this relatively level hilltop. Where drill rows ran up and down the slope, each disc track had been cut to plow sole. Mr. Mellinger is now starting a program of crop rotations over his 400-acre farm by dividing it into five or six fields and using a six-year rotation involving legumes.





A-WN-35021

3-24-38

Davenport-Wilbur proposed work area. Sheet and gully erosion on sloping agricultural lands. This erosion caused by rains and melting snow is increasing as the organic matter and fertility of the soil are lowered by erosion and cropping. Location: 5 miles northeast of Bluestem, Washington.

(colored)  
Slide #23





(OVER)

(Colored)  
Slide E-36<sup>u</sup>



WN-35065. Kittitas County, Washington; May 21, 1936.

Photograph showing results of overnight irrigation of peas on a 10% slope. The water did not remain evenly distributed all night. This was the first irrigation.

WN-35054. Kittitas County; May 21, 1936.

Erosion in irrigation furrows from irrigating peas. The silt deposit in a road barrow pit is shown in the immediate foreground. Sec. 9, T.16N, R.20E. Kittitas County, Washington.



WN-35096. Whatcom County, Washington; August 22, 1936.

A view of the coniferous seed beds at the Bellingham, Washington, nursery, Section of Nurseries, Soil Conservation Service, Region 11. This photograph shows approximately 80% of the area devoted to seed beds in 1936. Note the over-head sprinkling system and the shade frames used to cover the seed beds. Approximately 12,000,000 seedlings are being produced in the beds shown. In the background is the greenhouse, plant shelter, hot house, and seed house.





Wn-35,100. Washington.  
CROPS - Grass.

Picture showing a stand of native bunchgrass within the city limits of  
Spokane, Washington. The average height of this grass is about 18 inches.  
Spokane County. November 5, 1936. Photo by J. G. James.

(colored)  
Slide C-53<sup>u</sup>



Wn-35,158 Spokane County 4-13-37  
Proper conservation methods on forest,  
range, and farm lands do much to sustain  
the clear flow of water in streams and  
rivers, benefit wildlife, protect  
breeding places of fish and fowl, and  
increase recreational opportunities for  
mankind. Nine miles north of Spokane,  
Spokane County, Washington.

(Colored)  
Slide E-90



Enlargement # 169  
Composite With WN-35,290



Wn-35,274                      Spokane County                      10-21-39  
Portable sprinkler irrigation system for Ezra A. Eickmeyer, 5 miles south of  
Deer Park, Washington, installed under the Water Facilities program. He is  
shown here examining one of the 15 hammer-head sprinklers operating in his dry  
alfalfa field. His farmstead is seen in center background.



Enlargement #167  
Composite with WN-35,295



Wn-35,295

Stevens County

9-20-39

Field seeded to fall wheat wheat being irrigated by newly constructed border irrigation system, on Stephen H. Ross farm, six miles north of Chewelah. Mr. Ross is seen removing earthly material to permit an even distribution of flow over border strip. This is the first year that irrigation practices have been in operation on this field.



Enlargement #167  
Composite With WN-25,295

Wn-35,275      Spokane County      10-21-39  
Electric pumping unit for portable sprinkler  
irrigation system of Ezra A. Eickmeyer, Deer  
Park, Washington, installed under the water  
facility program. The compact 5 H. P. "close-  
cupld" centrifugal pump and electric motor  
unit capable of delivering 100 gallons per  
minute, is shown in center foreground and the  
control panel in upper left-hand corner.



Enlargement # 169  
Composite With WN-35274



Wn-35,290

Stevens County

9-20-39

Stephen H. Ross, Cooperator, six miles north of Chewelah, Washington. Wooden flume for transporting water from pipe system to irrigable lands seeded to fall wheat and alfalfa with companion crop of smooth brome and crested wheat. This was installed under the Water Facilities program during the summer of 1939.

Slide # 134<sup>cu</sup>



Wn-35,312

Sheet erosion highly contrasted by light snowfall remaining on north slope of this summer fallow field. Several days of heavy rainfall had riddled this field to an average rill depth of 6 inches.



Wn-35,311      Whitman County      2-14-40  
Roadside silt deposition. Such deposits averaged 12 tons to mile along road between Moscow, Idaho and Spangle, Washington in the Spring of 1940. 1 mi N of Rosalia, Washington.





Wn-35,312

Sheet erosion highly contrasted by light snowfall remaining on north slope of this summer fallow field. Several days of heavy rainfall had riddled this field to an average rill depth of six inches.





C-6066. ~~Wapinitia~~.

C-6066

(Pardee 199)

1912

Surface of Okanogan Plateau west of Duley Lake. Shows salt-rimmed alkaline pond. Tp. 31 N. R. 26 E, W. M., Sec. 14, Colville Reservation, Washington, Okanogan County. Bunchgrass practically virgin except for scattered Indian grazing. J. T. Pardee, U. S. Geological Survey.



C-6067

(Pardee 197)

1912

Surface of plateau west of Omaha Lake, shows erratic basalt boulders. Tp. 31 N. R. 27E, W. M. Sec. 14, Colville Reservation, Washington, Okanogan County. Practically virgin bunchgrass except for scattered Indian grazing. Horses hungry after feeding on badly overgrazed range outside reservation, are stopping to graze. Photograph by J. T. Pardee, U. S. Geological Survey.





66068 (Pardee 129) 1912.

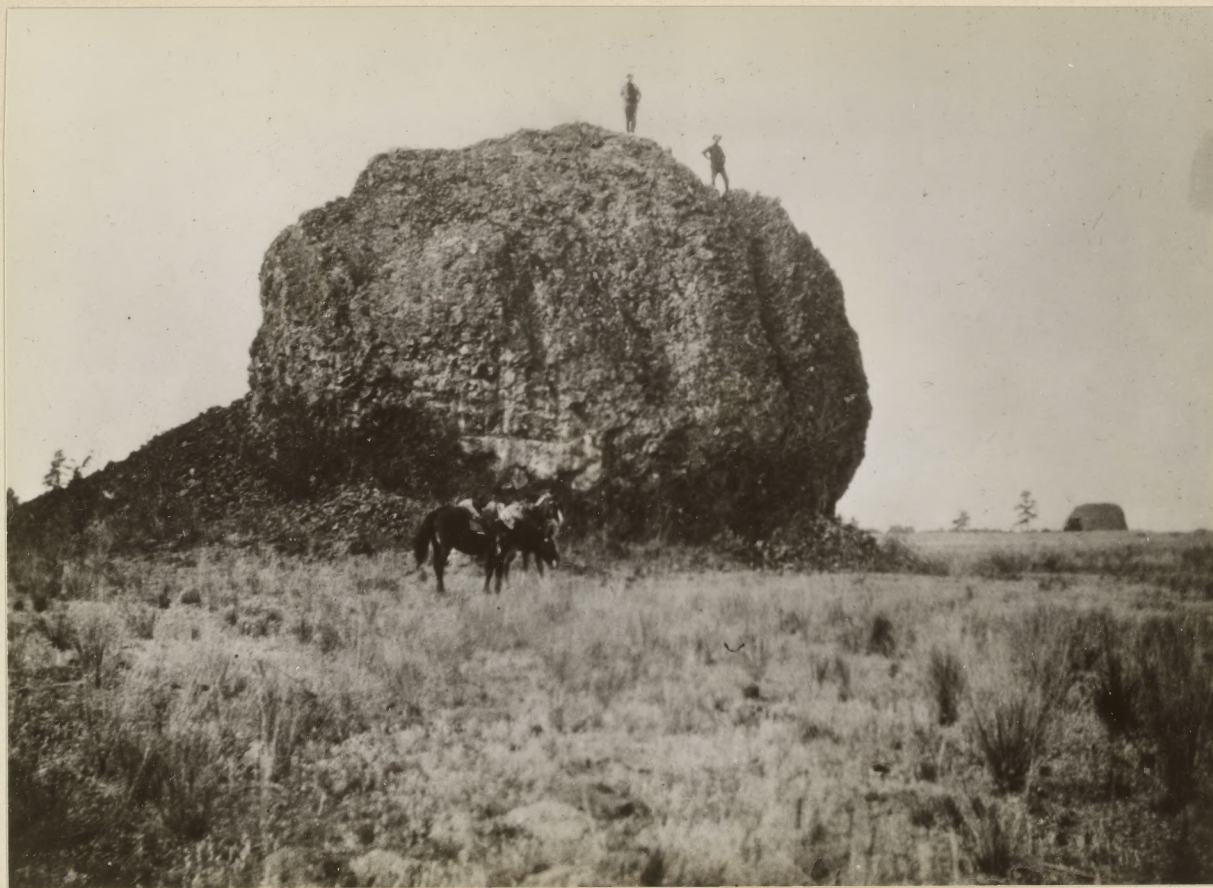
Colville Indian Reservation, Washington, Okanogan County.  
Glacial boulder on Basalt plain. Virgin bunchgrass except for  
Indian grazing. Photograph taken by J. T. Pardee, of U. S. Geological  
Survey, while surveying in this territory.



C-6077 (Pardee 152) 1912

Valley of Columbia River near mouth of Whitestone Creek, looking down stream toward Hellgate Rapids. Bold outcrops of porphyry, Colville Reservation. Note stand of bunchgrass. Photograph by J. T. Pardee, U. S. Geological Survey.





C-6079 (Pardee 142) 1912

Glacial boulder of basalt lying on grand plain, one mile west of Buffalo Lake, Colville Reservation, Okanogan County, Virgin grass except for Indian grazing. Photograph by J. T. Pardee, U. S. Geological Survey.





C-6082. Pullman, Washington; 3-8-37.  
α (5A-1887)

Observational row-plantings of native and introduced plants at the Pullman, Washington Nursery. Plantings of this nature are made at a few selected locations throughout the country to observe and study the habits, drought-resistance, erosion control efficiency, forage value, etc. of grasses and other plants which appear to be of special value for the purposes in mind. Outstanding species are subsequently used on the watershed areas for revegetation and other economic purposes.





C-6813

Sept 19, 1940

Trees and stumps remaining after forest fire. (Negative to come in from field later. 10-22-40). Recent second burn along Wolf Creek Highway in Coast Range between Portland, Ore. and the coast.





WN-181

Whitman, Washington

A shelterbelt on a typical Palouse hilltop which consists of a long gently sloping south slope and a comparatively short steep north slope. Planting this shelterbelt well away from the steep north slope will assure deposition of snow on top of the ridge rather than on the north slope.

Photo By: Wayne B. Read

July, 1939

slide 386<sup>c</sup>